

Application No. 10/678,288
Paper dated September 1, 2006
Response to Office Action of June 2, 2006
Attorney Docket No. 2204-031822

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended): A hydrocarbon-reforming catalyst, which ~~comprises: comprising:~~ formed from at least one oxide powder of selected from the group consisting of magnesia, alumina, zirconia, titania and calcia;

~~a porous carrier body, which is formed from at least one oxide powder of selected from the group consisting of magnesia, alumina, zirconia, titania and calcia; a complex oxide formed on a surface of the porous carrier body with reaction of comprising at least one catalytic-activity constituent selected from the group consisting of Ni and Co with and at least one carrier-forming constituent selected from the group consisting of compounds of Mg, Al, Zr, Ti and Ca, wherein the complex oxide is formed by co-precipitating both the catalytic-activity and carrier-forming constituents on a surface during calcining of the porous carrier body simultaneously from an impregnating solution, and calcining the porous body impregnated with the catalytic-activity constituent and the carrier-forming constituent; constituents; and~~

~~catalytic-activity particles, produced by activating the from-said complex oxide by an activating process and distributed on the surface of said the porous body, wherein 80% or more of said the catalytic-activity particles are 3.5 nm or less in size.~~

Claim 2 (currently amended): The hydrocarbon-reforming catalyst as defined by Claim 1, wherein the catalytic-activity particles are one or more selected from of the group consisting of metals Ni, Co and compounds of Ni and Co.

Claim 3 (withdrawn): A method of manufacturing a hydrocarbon-reforming catalyst, which comprises the steps of:

providing an impregnating solution, which contains at least one catalytic-activity constituent selected from the group consisting of salts and compounds of Ni and Co

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and at least one carrier-forming constituent selected from the group consisting of salts and compounds of Mg, Al, Zr, Ti and Ca;

soaking a porous preform, which is formed from at least one oxide powder of magnesia, alumina, zirconia, titania and calcia, in said impregnating solution, whereby said catalytic and carrier-forming constituents are simultaneously infiltrated into at least a surface layer of said porous preform;

calcining said porous preform impregnated with said catalytic and carrier-forming constituents at a temperature of 700°C or higher in an oxidizing atmosphere, whereby said catalytic-activity and carrier-forming constituents are converted to a complex compound(s); and

heating said calcined porous preform at a temperature of 500°C or higher in a reducing atmosphere, whereby fine catalytic-activity particles are produced from said complex oxide(s).

Claim 4 (withdrawn): The catalyst-manufacturing method defined by Claim 3, wherein the impregnating solution has a mole ratio of the carrier-forming constituent to the catalytic-activity constituent adjusted to a value within a range of 0.5-5.